

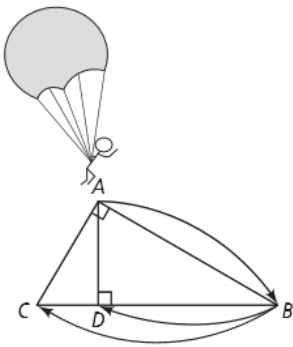
Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

7-4 Activity: Exploring with Skydiver Skip

Similarity in Right Triangles

Skydiver Skip loves to apply the geometric mean. In fact, it's all he does. He always lands on the right angle of a right triangle whose altitude is drawn. He knows that if he does, each path down the mountain is a geometric mean between two segments along the hypotenuse.

For example, in the triangle at the right, Skip would land at A.  $\overline{AB}$ ,  $\overline{AD}$ , and  $\overline{AC}$  would function as geometric means in three different proportions. So, if he went down  $\overline{AB}$ , his options for trails would be  $\overline{BD}$  or  $\overline{BC}$ . So,  $\frac{AB}{BD} = \frac{BC}{AB}$ . Setting up these proportions allows him to calculate trail lengths and plan his expeditions.



For his next adventure, Skydiver Skip needs your help. He plans to land on the beautiful planet Trianguland where triangular mountains surround the globe. He has a mapmaker's early draft with the correct measurements, but the map was not drawn to scale. Skip asks you to:

- 1. Put an "X" through any triangles that do not satisfy his initial conditions (they must be right triangles with an altitude drawn).
- 2. Based on the labeled information, set up a proportion, using a path down the mountain as a geometric mean.
- 3. Solve for the missing trail length.

